

LISTING OF CLAIMS

1. (Previously presented) A film-forming composition comprising a continuous aqueous phase and a dispersed phase, the dispersed phase comprising (i) a particulate polymer or emulsified liquid prepolymer, and (ii) a coalescent aid comprising an ester derived from a fatty acid of an oil of plant or animal origin, the ester having the formula RCOOX wherein R is hydrocarbyl or substituted hydrocarbyl and comprises at least two unsaturated carbon-carbon bonds and X is $-\text{C}_2\text{H}_4\text{OH}$, $-\text{C}_2\text{H}_4\text{OC}_2\text{H}_4\text{OH}$, $-\text{C}_3\text{H}_6\text{OH}$, or $-\text{C}_3\text{H}_6\text{OC}_3\text{H}_6\text{OH}$, **whereby air oxidation of the coalescent aid causes an increase in the glass transition temperature of a film of the composition when the film is cured in the presence of air.**
2. (Previously presented) The film-forming composition of claim 1 wherein R comprises about 9 to about 25 carbon atoms.
3. (Previously presented) The film-forming composition of claim 1 wherein R and X, in combination, contain no more than about 35 carbon atoms.
4. CANCELLED.
5. (Original) The film-forming composition of claim 1 wherein R comprises at least two unsaturated carbon-carbon bonds in conjugation.
6. (Previously presented) The film-forming composition of claim 1 wherein R is substituted hydrocarbyl and the hydrocarbyl substituent is selected from the group consisting of ketones, esters, alcohols, amides, halogens, urea, urethane, and nitrile substituents.
7. CANCELLED.
8. (Previously presented) The film-forming composition of claim 1 wherein the ester is derived from corn oil, sunflower oil, safflower oil, soybean oil, canola oil, or linseed oil.
9. (Previously presented) The film-forming composition of claim 8 wherein the ester is derived from a fatty acid of corn oil.

10. (Previously presented) The film-forming composition of claim 8 wherein the ester is derived from a fatty acid of sunflower oil.

11. (Previously presented) The film-forming composition of claim 8 wherein the ester is derived from a fatty acid of safflower oil.

12. (Previously presented) The film-forming composition of claim 8 wherein the ester is derived from a fatty acid of soybean oil.

13. CANCELLED.

14. (Original) The film-forming composition of claim 7 wherein the fatty acid is a fatty acid derived from soybean oil.

15. (Original) The film-forming composition of claim 1 wherein the weight of the ester is about 0.1 % to about 50 % of the weight of the particulate polymer or liquid pre-polymer.

16. (Previously presented) The film-forming composition of claim 15 wherein the weight of the ester is about 0.1 % to about 4 % of the weight of the particulate polymer or liquid pre-polymer.

17. (Original) The film-forming composition of claim 1 wherein the continuous aqueous phase constitutes at least about 20 wt.% of the film-forming composition.

18. (Previously presented) The film-forming composition of claim 17 wherein the ester is an ester derived from a fatty acid of corn oil, sunflower oil, safflower oil, soybean oil, canola oil, or linseed oil.

19. (Previously presented) The film-forming composition of claim 1 wherein the dispersed or continuous aqueous phase further comprises an additive selected from the group consisting of wetting aids, dispersants, thickeners, defoaming agents, biocides, algicides, ultra-violet inhibitors, flow agents, leveling agents, reology modifiers, freeze thaw stabilizing agents, pH modifiers, flash rust inhibitors, and biocides.

20. (Original) The film-forming composition of claim 1 wherein the film-forming composition comprises a mixture of coalescent aids and the ester comprises at least about 5 wt.% of the mixture.

21. (Previously presented) The film-forming composition of claim 1 wherein the unsaturated fatty acid comprises at least about 25 wt.% of the fatty acid content of the oil.

22. (Previously presented) The film-forming composition of claim 1 wherein the film-forming composition comprises a mixture of coalescent aids, the ester comprises at least about 5 wt.% of the mixture, and the unsaturated fatty acid comprises at least about 25 wt.% of the fatty acid content of the oil.

23. (Previously presented) The film-forming composition of claim 1 wherein the film-forming composition comprises a mixture of coalescent aids, the ester comprises at least about 5 wt.% of the mixture, and the unsaturated fatty acid comprises at least about 50 wt.% of the fatty acid content of the oil.

24. (Original) The film-forming composition of claim 23 wherein the film-forming composition contains at least about 20 wt.% water.

25. (Original) The film-forming composition of claim 23 wherein the film-forming composition contains at least about 20 wt.% water, at least about 10 wt.% particulate polymer or liquid pre-polymer, and the weight of the ester is about 0.1 % to about 50 % of the weight of the particulate polymer or liquid pre-polymer.

26. (Original) The film-forming composition of claim 1 wherein the film-forming composition contains at least about 20 wt.% water, at least about 10 wt.% particulate polymer or liquid pre-polymer, and the weight of the ester is about 0.1 % to about 50 % of the weight of the particulate polymer or liquid pre-polymer.

27. (Original) The film-forming composition of claim 26 wherein at least 95 wt.% of the ester is dissolved in the particulate polymer or liquid pre-polymer.

28. (Original) The film-forming composition of claim 1 wherein at least 95 wt.% of the ester is dissolved in the particulate polymer or liquid pre-polymer.

29. (Original) The film-forming composition of claim 1 wherein the continuous aqueous phase contains less than about 10 wt.% organic solvent.

30. (Original) The film-forming composition of claim 1 wherein at least 95 wt.% of the ester is dissolved in the particulate polymer or liquid pre-polymer and the continuous aqueous phase contains less than about 10 wt.% organic solvent.

31. (Original) The film-forming composition of claim 30 wherein the film-forming composition contains at least about 20 wt.% water, at least about 10 wt.% particulate polymer or liquid pre-polymer, and the weight of the ester is about 0.1 % to about 50 % of the weight of the particulate polymer or liquid pre-polymer.

32. (Previously presented) The film-forming composition of claim 31 wherein the film-forming composition comprises a mixture of coalescent aids, the ester comprises at least about 5 wt.% of the mixture, and the unsaturated fatty acid comprises at least about 50 wt.% of the fatty acid content of the oil.

33. (Previously presented) The film-forming composition of claim 30 wherein the film-forming composition comprises a mixture of coalescent aids, the ester comprises at least about 5 wt.% of the mixture, and the unsaturated fatty acid comprises at least about 50 wt.% of the fatty acid content of the oil.

34. (Previously presented) The film-forming composition of claim 1 comprising at least about 10 wt.% of a continuous aqueous phase.

35. (Original) The film-forming composition of claim 34 wherein at least 95 wt.% of the ester is dissolved in the particulate polymer or liquid pre-polymer and the continuous aqueous phase contains less than about 10 wt.% organic solvent, based upon the weight of the continuous phase.

36. (Original) The film-forming composition of claim 35 wherein the film-forming composition contains at least about 20 wt.% water, at least about 10 wt.% particulate polymer or liquid pre-polymer, and the weight of the ester is about 0.1 % to about 50 % of the weight of the particulate polymer or liquid pre-polymer.

37. (Previously presented) The film-forming composition of claim 35 wherein the film-forming composition comprises a mixture of coalescent aids, the ester comprises at least about 5 wt.% of the mixture, and the unsaturated fatty acid comprises at least about 50 wt.% of the fatty acid content of the oil.

38. (Previously presented) The film-forming composition of claim 34 wherein the film-forming composition comprises a mixture of coalescent aids, the ester comprises at least about 5 wt.% of the mixture, and the unsaturated fatty acid comprises at least about 50 wt.% of the fatty acid content of the oil.

39. (Previously presented) The film-forming composition of claim 1 wherein R comprises at least two unsaturated carbon-carbon bonds in conjugation and at least 90 wt.% of the ester is dissolved in the particulate polymer or liquid pre-polymer.

40. (Previously presented) The film-forming composition of claim 39 wherein the ester is derived from a fatty acid of soybean oil and X is $-C_2H_4OH$, $-C_3H_6OH$, or $-C_3H_6OC_3H_6OH$.

41. (Previously presented) The film-forming composition of claim 40 wherein the weight of the ester is about 0.1 % to about 50 % of the weight of the particulate polymer or liquid pre-polymer.

42. (Previously presented) The film-forming composition of claim 39 wherein the weight of the ester is about 0.1 % to about 50 % of the weight of the particulate polymer or liquid pre-polymer.

43. (Previously presented) The film-forming composition of claim 39 wherein the ester is an ester derived from a fatty acid of corn oil, sunflower oil, safflower oil, soybean oil, canola oil, or linseed oil.

44. (Previously presented) The film-forming composition of claim 43 wherein the weight of the ester is about 0.1 % to about 50 % of the weight of the particulate polymer or liquid pre-polymer.

45. (Previously presented) The film-forming composition of claim 20 wherein the ester is an ester derived from a fatty acid of corn oil, sunflower oil, safflower oil, soybean oil, canola oil, or linseed oil.

46. (Previously presented) The film-forming composition of claim 45 wherein the weight of the ester is about 0.1 % to about 50 % of the weight of the particulate polymer or liquid pre-polymer.

47. (Previously presented) The film-forming composition of claim 45 wherein the ester is derived from a fatty acid of soybean oil and X is $-C_2H_4OH$, $-C_3H_6OH$, or $-C_3H_6OC_3H_6OH$.

48. (Previously presented) The film-forming composition of claim 47 wherein the weight of the ester is about 0.1 % to about 50 % of the weight of the particulate polymer or liquid pre-polymer.

49. (Previously presented) The film-forming composition of claim 20 wherein the ester comprises at least 25wt.% of the mixture.

50. (Previously presented) The film-forming composition of claim 49 wherein R comprises about 9 to about 25 carbon atoms and R and X, in combination, contain no more than about 35 carbon atoms.

51. (Previously presented) The film-forming composition of claim 49 wherein the ester is an ester derived from a fatty acid of corn oil, sunflower oil, safflower oil, soybean oil, canola oil, or linseed oil.

52. (Previously presented) The film-forming composition of claim 3 wherein X is $-CH_2CH_2OH$, $-CH_2CH_2OCH_2CH_2OH$, $-CH_2CH_2CH_2OH$, or $-CH_2CH_2CH_2OCH_2CH_2CH_2OH$.

53. (Previously presented) The film-forming composition of claim 52 wherein the weight of the ester is about 0.1 % to about 50 % of the weight of the particulate polymer or liquid pre-polymer.

54. (Previously presented) The film-forming composition of claim 3 wherein the weight of the ester is about 0.1 % to about 50 % of the weight of the particulate polymer or liquid pre-polymer.

55. (Previously presented) The film-forming composition of claim 3 wherein at least 95 wt.% of the ester is dissolved in the particulate polymer or liquid pre-polymer.

56. (Previously presented) The film-forming composition of claim 3 wherein at least 95 wt.% of the ester is dissolved in the particulate polymer or liquid pre-polymer and the continuous aqueous phase contains less than about 10 wt.% organic solvent.

57. CANCELLED.

58. (Previously presented) The film-forming composition of claim 52 wherein the weight of the ester is about 0.1 % to about 50 % of the weight of the particulate polymer or liquid pre-polymer.

59. (Previously presented) The film-forming composition of claim 58 wherein the ester is derived from a fatty acid of corn oil, sunflower oil, safflower oil, soybean oil, canola oil, or linseed oil.

60. CANCELLED.

61. CANCELLED.

62. (Previously presented) The film-forming composition of claim 9 wherein the ester is derived from a fatty acid of corn oil and wherein X is $-C_2H_4OH$.

63. (Previously presented) The film-forming composition of claim 9 wherein the ester is derived from a fatty acid of corn oil and wherein X is $-C_2H_4OC_2H_4OH$.

64. (Previously presented) The film-forming composition of claim 9 wherein the ester is derived from a fatty acid of corn oil and wherein X is $-C_3H_6OH$.

65. (Previously presented) The film-forming composition of claim 9 wherein the ester is derived from a fatty acid of corn oil and wherein X is $-C_3H_6OC_3H_6OH$.

66. CANCELLED.

67. (Previously presented) The film-forming composition of claim 10 wherein the ester is derived from a fatty acid of sunflower oil and wherein X is $-C_2H_4OH$.

68. (Previously presented) The film-forming composition of claim 10 wherein the ester is derived from a fatty acid of sunflower oil and wherein X is $-C_2H_4OC_2H_4OH$.

69. (Previously presented) The film-forming composition of claim 10 wherein the ester is derived from a fatty acid of sunflower oil and wherein X is $-C_3H_6OH$.

70. (Previously presented) The film-forming composition of claim 10 wherein the ester is derived from a fatty acid of sunflower oil and wherein X is $-C_3H_6OC_3H_6OH$.

71. CANCELLED.

72. (Previously presented) The film-forming composition of claim 11 wherein the ester is derived from a fatty acid of safflower oil and wherein X is $-C_2H_4OH$.

73. (Previously presented) The film-forming composition of claim 11 wherein the ester is derived from a fatty acid of safflower oil and wherein X is $-C_2H_4OC_2H_4OH$.

74. (Previously presented) The film-forming composition of claim 11 wherein the ester is derived from a fatty acid of safflower oil and wherein X is $-C_3H_6OH$.

75. (Previously presented) The film-forming composition of claim 11 wherein the ester is derived from a fatty acid of safflower oil and wherein X is $-C_3H_6OC_3H_6OH$.

76. CANCELLED.

77. (Previously presented) The film-forming composition of claim 12 wherein the ester is derived from a fatty acid of soybean oil and wherein X is $-C_2H_4OH$.

78. (Previously presented) The film-forming composition of claim 12 wherein the ester is derived from a fatty acid of soybean oil and wherein X is $-C_2H_4OC_2H_4OH$.

79. (Previously presented) The film-forming composition of claim 12 wherein the ester is derived from a fatty acid of soybean oil and wherein X is $-C_3H_6OH$.

80. (Previously presented) The film-forming composition of claim 12 wherein the ester is derived from a fatty acid of soybean oil and wherein X is $-C_3H_6OC_3H_6OH$.

81. CANCELLED.

82. (Previously presented) The film-forming composition of claim 7 wherein the fatty acid is a fatty acid derived from safflower oil.

83. (Previously presented) The film-forming composition of claim 7 wherein the fatty acid is a fatty acid derived from corn oil.

84. (Previously presented) The film-forming composition of claim 7 wherein the fatty acid is a fatty acid derived from sunflower oil.

85. (Previously presented) The film-forming composition of claim 39 wherein the ester is derived from a fatty acid of corn oil and X is $-C_2H_4OH$, $-C_3H_6OH$, or $-C_3H_6OC_3H_6OH$.

86. (Previously presented) The film-forming composition of claim 39 wherein the ester is derived from a fatty acid of sunflower oil and X is $-C_2H_4OH$, $-C_3H_6OH$, or $-C_3H_6OC_3H_6OH$.

87. (Previously presented) The film-forming composition of claim 39 wherein the ester is derived from a fatty acid of safflower oil and X is $-C_2H_4OH$, $-C_3H_6OH$, or $-C_3H_6OC_3H_6OH$.

88. (Previously presented) The film-forming composition of claim 85 wherein the weight of the ester is about 0.1 % to about 50% of the weight of the particulate polymer or liquid pre-polymer.

89. (Previously presented) The film-forming composition of claim 86 wherein the weight of the ester is about 0.1 % to about 50% of the weight of the particulate polymer or liquid pre-polymer.

90. (Previously presented) The film-forming composition of claim 87 wherein the weight of the ester is about 0.1 % to about 50% of the weight of the particulate polymer or liquid pre-polymer.

91. (Previously presented) The film-forming composition of claim 45 wherein the ester is derived from a fatty acid of corn oil and X is $-C_2H_4OH$, $-C_3H_6OH$, or $-C_3H_6OC_3H_6OH$.

92. (Previously presented) The film-forming composition of claim 91 wherein the weight of the ester is about 0.1 % to about 50% of the weight of the particulate polymer or liquid pre-polymer.

93. (Previously presented) The film-forming composition of claim 45 wherein the ester is derived from a fatty acid of sunflower oil and X is $-C_2H_4OH$, $-C_3H_6OH$, or $-C_3H_6OC_3H_6OH$.

94. (Previously presented) The film-forming composition of claim 93 wherein the weight of the ester is about 0.1 % to about 50% of the weight of the particulate polymer or liquid pre-polymer.

95. (Previously presented) The film-forming composition of claim 45 wherein the ester is derived from a fatty acid of safflower oil and X is $-C_2H_4OH$, $-C_3H_6OH$, or $-C_3H_6OC_3H_6OH$.

96. (Previously presented) The film-forming composition of claim 95 wherein the weight of the ester is about 0.1 % to about 50% of the weight of the particulate polymer or liquid pre-polymer.